

Woodbrook Phase 1

Quality Audit

Aeval

October 2019



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This document and its contents have been prepared and are intended solely for Aeval's information and use in relation to Woodbrook Development Phase 1 Quality Audit

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Document history

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
Rev 0	Draft Issue	CJP	CJP	MD	MD	15/07/2019
Rev 1	Issue	CJP	CJP	MD	MD	31/07/2019
Rev 2	Planning Submission	CJP	CJP	MD	MD	29/10/2019

Client signoff

Client	Aeval
Project	Woodbrook Development Phase 1
Job number	5154251
Client signature / date	

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1. Introduction

1.1. Background

This report describes the findings of a Quality Audit associated with the adjoining road and footpath provision, accesses proposals and internal circulation for the proposed residential development at Woodbrook Phase 1, Shankill, Co. Dublin.

The Audit has been completed by Atkins on behalf of Aeval.

1.2. Site Inspection

The day-time site inspection was carried out on the 28th of June 2019.

Weather conditions during the site inspection were moderate. Traffic conditions were light with a steady flow of traffic along the R119. Pedestrian and cyclist movement was also noted on the footpaths and carriageway during the site visit.

1.3. The Team

The Audit Team members associated with the Quality Audit and were as follows:

Access, Walking and Cycling Audit

- Team Leader: Colin J Prendeville BEng (Hons) PCert (RSA) CEng MIEI, MSoRSA.
- Team Member: Martin Deegan BEng (Hons) MSc CEng MICE
- Team Observer: Boris Miskovic BEng (Hons) MSc

1.4. The Design

The following drawings were examined as part of the Quality Audit:

Table 1-1 - Design Team Drawing List

DRAWING_NO	TITLE
5154251 / HTR / DR / 0000	COVER SHEET
5154251 / HTR / DR / 0001	SITE LOCATION MAP
5154251 / HTR / DR / 0002	STREET TYPOLOGY
5154251 / HTR / DR / 0100	PROPOSED ROAD KEY PLAN
5154251 / HTR / DR / 0101	PROPOSED ROAD PLAN LAYOUT - SHEET 1 OF 5
5154251 / HTR / DR / 0102	PROPOSED ROAD PLAN LAYOUT - SHEET 2 OF 5
5154251 / HTR / DR / 0103	PROPOSED ROAD PLAN LAYOUT - SHEET 3 OF 5
5154251 / HTR / DR / 0104	PROPOSED ROAD PLAN LAYOUT - SHEET 4 OF 5
5154251 / HTR / DR / 0105	PROPOSED ROAD PLAN LAYOUT - SHEET 5 OF 5
5154251 / HTR / DR / 0106	VEHICLE TRACKING - SHEET 1 OF 5
5154251 / HTR / DR / 0107	VEHICLE TRACKING - SHEET 2 OF 5
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5154251 / HTR / DR / 0111	PROPOSED JUNCTIONS KEY PLAN
5154251 / HTR / DR / 0112	JUNCTION VISIBILITY - SHEET 1 OF 7
5154251 / HTR / DR / 0113	JUNCTION VISIBILITY - SHEET 2 OF 7
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5154251 / HTR / DR / 0119	DUBLIN ROAD ENTRANCE LAYOUT
5154251 / HTR / DR / 0120	CAR PARK LAYOUT
5154251 / HTR / DR / 0201	PROPOSED LONG SECTION SHEET 1 OF 3
5154251 / HTR / DR / 0202	PROPOSED LONG SECTION SHEET 2 OF 3
5154251 / HTR / DR / 0203	PROPOSED LONG SECTION SHEET 3 OF 3
5154251 / HTR / DR / 0300	PROPOSED TYPICAL ROAD CROSS SECTION
5154251 / HTR / DR / 0301	TYPICAL ROAD CROSS SECTION AND DETAILS

1.5. Compliance

This Quality Audit is undertaken in accordance with **Section 5.4.2** of the Design Manual for Urban Roads and Streets. The UK Department for Transport Traffic Advisory Leaflet (TAL) 5/11 has also been referred to for additional guidance.

This Quality Audit consists of the following elements:

- **Access Audit** – focusing on accessibility requirements of vulnerable road users and in particular those of the visual and mobility impaired
- **Walking and Cycling Audit** – focusing on movement and place function requirements of pedestrians and cyclists
- **Road Safety Audit** – focusing on issues relating directly to road safety

2. Access Audit

2.1. Best Practice Guidance

This Access Audit has been carried out in accordance with general best practice guidance set out within the following documents:

- The Disability Act 2005;
- British Standards Institute BS8300:2001;
- Building Regulations 2000, Technical Guidance Document M – Access for People with Disabilities (Department of the Environment, Heritage and Local Government),
- Buildings for Everyone Access and use for all citizens (National Disability Authority)
- Access Auditing of the Built Environment Guidelines (National Disability Authority)
- Traffic Management Guidelines (Irish Government Publications 2003)
- Guidance on the use of Tactile Paving Surfaces: UK Department for Transport

2.2. Objectives

The objectives of this Access Audit are as follows:

- To ensure a high level of accessibility to the proposed development site for all vulnerable road users and in particular visually and mobility impaired user
- To ensure that the access infrastructure in relation to the external built environment is in accordance with current best practice
- To ensure that the current and future access needs within the scheme are recognised and developed

2.3. Accessibility Recommendations

In terms of progression, following delivery of the Accessibility Audit, the design team should consider all issues raised herein for inclusion into the final design. It is less costly to make the changes now, pre-construction, than later after the scheme has been commissioned.

them.

2.3.1. Problem: Inadequate Mobility Impaired Provision

Location: 5154251/HTR/DR/0120: Wheelchair Parking in Car Park

Dropped kerbs are not indicated at the wheelchair parking bays. This may create difficulty for wheelchair users to access the station and lead to conflict.

Recommendation

The Designer should make adequate provision for wheelchair users as part of the design.

2.3.2. Problem: Inadequate Mobility Impaired Provision

Location: 5154251/HTR/DR/0120: Train Station

Details of a lift to facilitate wheelchair users and mobility impaired is not indicated at the train station. This may create difficulty for those wishing to access the train platform.

Recommendation

The Design should consider how mobility impaired will access the train platforms.

2.4. General Accessibility Recommendations

A summary of the design features, together with recommended actions to be taken during the relevant stage of the design or operation of the scheme have been detailed in the following table and should be given consideration by the design team.

Table 2.1 - Access Audit Finding Summary Table

I.D.	Location	Feature	Action	When
01	Pedestrian and Cycle Links	Lighting Provision	The Designer should consider lighting proposals throughout and connections to external roads.	Design Stage
02	Car Parking Areas	Car park provision	Ensure car parking is accessible, easy to use, and sufficient parking spaces are provided within a well-designed environment to meet the needs of all people expected to use them	Design Stage
03	External Site & Public Footpath	Pedestrian Provision	Ensure contrasting colours/materials are used to define the pedestrian provision and also the street fronting the development and buildings throughout.	Design Stage
04	External Site & Public Footpath	Pedestrian Provision	Ensure footpath edges are clearly defined.	Design Stage
05	External Site & Public Footpath	Pedestrian Provision	Ensure defined pedestrian zones are free from street furniture and clutter.	Design & Operational Stages
06	External Site & Public Footpath	Pedestrian Provision	Ensure steps are legible and contrasting colour nosings are provided.	Design Stage
07	Public Footpaths	Pedestrian Provision	Ensure appropriate dropped kerbs and tactile paving is provided at crossing points.	Design Stage
08	External Site	Building Entrance	Ensure the main building entrances are well defined and easily contrasted to the rest of the building façade.	Design Stage
09	Public Footpaths	Pedestrian Provision	At the site boundaries with the public road, all internal footpaths should link seamlessly with external footpaths to accommodate pedestrian progression.	Design Stage
10	External Site	Building Entrance	Ensure clear sight lines to the main pedestrian entrances are provided from all approached to the building. Trees and street furniture should not block this.	Design Stage
11	External Site & Public Footpath	Street Lighting	Ensure street lighting is located where pedestrian movement decisions are required (i.e. at crossing points, entrances etc).	Design Stage

I.D.	Location	Feature	Action	When
12	General	Drainage	For drainage gullies or inlets, ensure any break in the surface (or gap) is no greater than 10mm and is perpendicular to line of travel. Locate drainage features away from crossing points.	Design Stage
13	General	Drainage	Ensure access routes are laid to even falls to allow proper drainage and prevent the formation of puddles. The cross-fall gradient to any access route should not exceed 1 in 50, except when associated with a dropped-kerb.	Design Stage
14	External Site & Public Footpath	Provision of Street Furniture	Ensure furniture does not encroach on the clear width of pathways.	Design Stage
15	External Site & Public Footpath	Provision of Street Furniture	Ensure street furniture contrasts in colour with the background.	Design Stage
16	External Site & Public Footpath	Provision of Street Furniture	Ensure that any pedestal mounted items are fitted with a tapping rail 250mm above the ground, contrasting in colour with the pavement.	Design Stage

3. Walking and Cycling Audit Findings

3.1. Problem: Missing Provision for VRUs

Location: 5154251/HTR/DR/0101: T-junction at 0+110

Provision for vulnerable road users is not evident in the design drawings. The proximity of the bend to the junction may exacerbate the risk.

Recommendation

The Designer should consider provision for vulnerable road users at this location.

3.2. Problem: Kinked Alignment on Cycle Track

Location: 5154251/HTR/DR/0102: Cycle-track at Junction of MC00 ch 0+90

A kinked alignment is provided along MC00 which coincides with provision of Tramline 'tactile paving'. Cyclists may have difficulty navigating this alignment leading to loss-of-control.

Recommendation

The Designer should consider locating the tramlines away from the kink. Alternatively, the kink should be omitted.

3.3. Problem: Tramline Paving on Curved Alignment

Location: 5154251/HTR/DR/0103: Cycle-track at Junction of MC70 / MC00
5154251/HTR/DR/0104: Cycle-track on MC00 ch 0+330

Tramline 'tactile paving' has been provided on a curved alignment. Cyclists may have difficulty navigating this alignment leading to loss-of-control.

Recommendation

The Designer should consider locating the tramlines away from the curves.

3.4. Problem: Inadequate Pedestrian Provision

Location: 5154251/HTR/DR/0119: South-west of Traffic Signals

An existing access is located in proximity to the traffic signal. The junction may not adequately serve vulnerable road users and may lead to conflict.

Recommendation

The Designer should make adequate provision for vulnerable road users cross the junction.

4. Road Safety Audit

4.1. Stage 1 Road Safety Audit Report

The Stage 1 Road Safety Audit has been provided within Appendix 1.

Appendices

Appendix 1. Road Safety Audit

Woodbrook Development Phase 1

Stage 1 Road Safety Audit

Aeval

July 2019

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Rev 0	Draft	CJP	CJP	MD	MD	15/07/2019
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Client signoff

Client	Aeval
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1. Introduction

1.1. Background

This report describes the findings of a Stage 1 Road Safety Audit associated with the proposed residential the development Woodbrook Phase 1, Shankill, Co. Dublin.

The Audit has been completed by Atkins on behalf of Aeval Ltd.

1.2. Site Inspections

The day-time site inspection was carried out on the 28th of June 2019.

Weather conditions during the site inspection were moderate. Traffic conditions were light with a steady flow of traffic along the R119. Pedestrian and cyclist movement was also noted on the footpaths and carriageway during the site visit.

1.3. The Team

The Road Safety Audit Team members were as follows:

- Team Leader: **Colin Prendeville** B.Eng(Hons), C.Eng MIEI, CIHT, MSoRSA
- Team Member: **Martin Deegan** BEng (Hons) MSc CEng MICE
- Observer: **Boris Miskovic** BEng (Hons) MSc

1.4. The Design

The following drawings were examined as part of the Stage 1 Road Safety Audit process:

Table 1-1 – Design Team Drawing List

DRAWING_NO	TITLE
5154251 / HTR / DR / 0000	COVER SHEET
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5154251 / HTR / DR / 0301	TYPICAL ROAD CROSS SECTION AND DETAILS

1.5. Compliance

This Road Safety Audit has been carried out in accordance with the procedures and scope set out in TII publication number **GE-STY-01024 - Road Safety Audit**.

As part of the road safety audit process, the Audit Team have examined only those issues within the design which relate directly to road safety.

The road safety audit process is not a design check, therefore verification or compliance with design standards or any other criteria have not formed part of the audit process.

All of the problems described in this report are considered by the Audit Team to require action in order to improve the safety of the scheme and minimise the risk of collision occurrence.

2. Road Safety Issues Identified

2.1. Problem: Proximity of Junction to Bend

Drawing/Location: HTR/DR/0101 / T-junction at Ch 0+110

A T-junction is proposed in proximity to a bend. Drivers are likely to cut across this junction and may conflict with opposing drivers.

Recommendation

The Designer should consider relocating the access eastwards and away from the bend.

2.2. Problem: Crossing Provision for VRU's

Drawing/Location: HTR/DR/0101 / T-junction at 0+110

Provision for VRU's (vulnerable road users) is not evident in the design drawings. The proximity of the bend to the junction may exacerbate the risk.

Recommendation

The Designer should consider provision for vulnerable road users at this location in conjunction with 2.1 above.

2.3. Problem: Shared-use Path Merging to Carriageway

Drawing/Location: 5154251/HTR/DR/0102: Roads MC40, MC41 and MC21

5154251/HTR/DR/0105: Road MC42

The shared use path that bounds the development merges crosses the carriageway at various locations. VRUs and traffic may not expect to abruptly cross each other's path; this may lead to conflict.

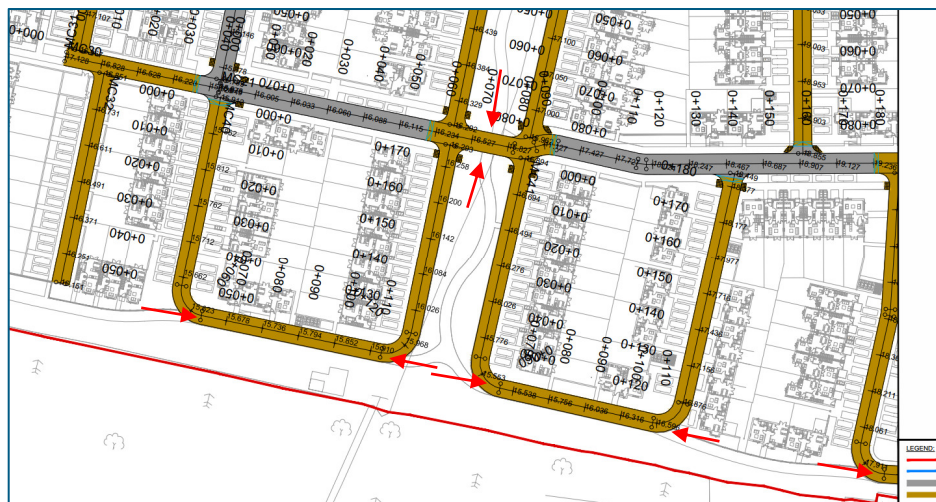


Figure 2-1 – Shared path crossing carriageway

Recommendation

The Designer should set out priority control measures at the locations described, affording advantage to VRU's where possible.

2.4. Problem: Crossing Provision for VRUs

Drawing/Location: 5154251/HTR/DR/0104: Cycle-track & footpath west of MC43

The cycle track and footpath for (east bound movement) guides VRUs directly towards the carriageway without crossing provision. This may lead to conflict.

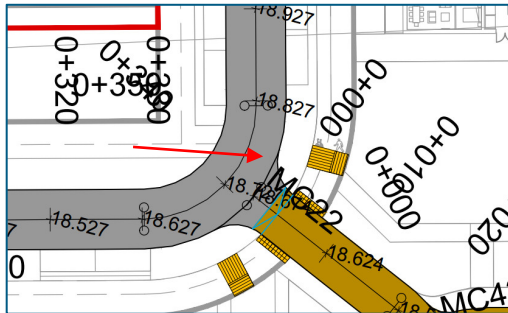


Figure 2-2 – Shared path abuts carriageway

Recommendation

The Designer should consider providing crossing facilities at this location.

2.5. Problem: North-South VRU Crossing Provision

Drawing/Location: 5154251/HTR/DR/0104 / Junction along MC22 ch 0+20

Provision for north-south movement has not been made for vulnerable road users. This may lead to difficulty for those wishing to cross the junction and subsequent conflict.

Recommendation

The Designer should consider providing crossing facilities at this location.

2.6. Problem: Convergence of Opposing VRU Streams

Location: 5154251/HTR/DR/0119: Ped Crossing to East of Traffic Signal

2 Cycle tracks and a shared use area converge in proximity either side of the toucan crossing. There is a risk of conflict where 4 opposing streams of VRUs converge particularly by the presence of cyclists.

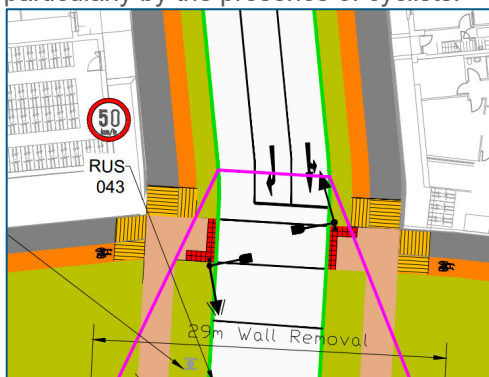


Figure 2-3 – Converging VRUs

Recommendation

The Designer should consider setting back the tramlines from the toucan crossing thereby increasing the distance between the converging VRUs.

2.7. Problem: Conflicting Road Markings

Location: 5154251/HTR/DR/0119: Cycle Track along West of Traffic Signal

The cycle track road markings continue through the pedestrian crossing. Additionally, a stop line has not been provided for the cycle track. This may lead to confusion and conflict.

Recommendation

The Designer review the marking at this location ensuring provision of a stop line. The cycle track marking should not continue through the crossing.

2.8. Problem: Inadequate Inter-visibility

Location: 5154251/HTR/DR/0119: East of Traffic Signal

The existing boundary wall and various trees are proposed to be retained as part of the scheme. This may hinder inter-visibility between VRUs and traffic leading to conflict.

Recommendation

The Designer should ensure adequate inter-visibility is provided between vehicles and vulnerable road users at this location.

2.9. Problem: Foliage Blocking Traffic Signals

Location: 5154251/HTR/DR/0119: Traffic Signals

Existing overhanging foliage could restrict visibility to the traffic signal heads and lead to conflict.

Recommendation

The Designer should make provision for the removal of any foliage which might block visibility to the traffic signals.

2.10. Problem: Restricted Visibility to Traffic Signals

Location: 5154251/HTR/DR/0119: Traffic Signals

A bus stop is located a short distance to the north of the traffic signal. Stationary buses may hinder the visibility of the traffic signals leading to conflict. The downhill gradient may increase speed and thus increase the risk of conflict.

Recommendation

The Designer should consider measures to ensure visibility of the traffic signals.

2.11. Problem: Set-back of Crossing from Desire Line

Location: 5154251/HTR/DR/0119: East of Traffic Signals

The crossing on the east of the junction is set-back a considerable distance from the likely desire line for the north-south movement. This may lead to some vulnerable road users failing to utilise the dedicated crossing and lead to conflict.

Recommendation

The Designer should review the distance between the toucan crossing to the east and the main junction.

3. Audit Team Statement

We certify that we have examined the drawings listed in Chapter 1 of this Report.

The Road Safety Audit has been carried out with the sole purpose of identifying any features of the design which could be removed or modified in order to improve the road safety aspects of the scheme.

The problems identified herein have been noted in the Report together with their associated recommendations for road safety improvements. We (the Audit Team) propose that these recommendations should be studied with a view to implementation.

No one on the Audit Team has been otherwise involved with the design of the measures audited.

Road Safety Audit Team

Colin J Prendeville

Audit Team Leader
 Road Safety Engineering Team
ATKINS

Signed: 
 Date: 15th July 2019

Martin Deegan

Audit Team Member
 Road Safety Engineering Team
ATKINS

Signed: 
 Date: 15th July 2019

Boris Miskovic

Audit Observer
 Road Safety Engineering Team
ATKINS

Signed: 
 Date: 15th July 2019

4. Designer's Response

The Designer should prepare an Audit Response for each of the recommendations using the Road Safety Audit Feedback Form attached in Appendix A.

When completed, this form should be signed by the Designer and returned to the Audit Team.

Please return the completed Road Safety Audit Feedback Form attached in Appendix A to:

Road Safety Engineering Team,
Atkins,
Atkins House,
150 Airside Business Park,
Swords,
Co Dublin,
Ireland.

Tel: 00 353 (0)1 810 8000
Email: colin.prendeville@atkinsglobal.com

The Audit Team will consider the Designer's response and reply indicating acceptance or otherwise of the Designers response to each recommendation.

Where the Designer and the Audit Team cannot agree on an appropriate means of addressing an underlying safety issue identified as part of the audit process, an Exception Report must be prepared by the Designer on each disputed item in the audit report.

Appendices

Appendix A: Road Safety Audit Feedback Form

Scheme: Woodbrook Development Phase 1

Audit Stage: Stage 1 Road Safety Audit

Date Audit Completed: 15th July 2019

Paragraph No. in Safety Audit Report	To be completed by the Designer			To be completed by the Audit Team
	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative Measures accepted by Auditors (yes/no)
2.1	Y	N	Location is a temporary turning head for refuse collection in a very low traffic environment. Will be removed as part of the next Phase of Development.	Y - Accepted on the basis it is a temporary situation
2.2	Y	N	No pedestrian activity will be occurring at this location negating requirement for VRU facilities. Temporary turning head will be removed as part of the next Phase of Development.	Y - Accepted on the basis it is a temporary situation
2.3	Y	N	The shared use path crossing the roads on raised tables. This will be a low speed environment and appropriate for the provision of uncontrolled crossings.	Y
2.4	Y	Y		
2.5	Y	N	As this location is a shared space street with low vehicle speeds formal crossings are minimised to encourage informal crossing within the street.	Y
2.6	Y	Y		
2.7	Y	Y		
2.8	Y	Y		
2.9	Y	Y		
2.10	Y	Y	As an interim measure the inline Bus Stop will be	Y

			relocated to a suitable location away from the junction. The inline bus stop will be replaced with an improved bus stop provision as part of a future bus improvement scheme.	
2.11	Y	N	The footpath and cyclepath have been setback the minimum distance to allow for retention of existing trees in line with the requirements of the Woodbrook\Shanganagh LAP. Balance of risks have been assessed and this falls within reasonable grounds.	Y

Signed by the Designer:



Date: 31/07/19

Signed by the Audit Team Leader:



Date: 31/07/19

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